

CLAIMS

WE CLAIM:

1. A method of making a rubber composition, the method comprising
the steps of:

providing fibers of a desired length;

treating the fibers with a treating liquid comprising a nitrile rubber-modified
epoxy resin and an alkylphenol •formaldehyde resin; and

dispersing the treated fibers in rubber.

2. The method of making a rubber composition according to claim 1
wherein the step of providing fibers comprises cutting filaments to form fibers of
a desired length.

3. The method of making a rubber composition according to claim 2
wherein the step of treating the fibers comprises treating the filaments with the
treating liquid before the filaments are cut to form the fibers.

4. The method of making a rubber composition according to claim 1
further comprising the step of treating the fibers with an RFL liquid.

5. The method of making a rubber composition according to claim 2
further comprising the step of treating the fiber with an RFL liquid.

6. The method of making a rubber composition according to claim 3 further comprising the step of treating the fiber with an RFL liquid.

7. The method of making a rubber composition according to claim 1 wherein a weight ratio of alkylphenol • formaldehyde resin to nitrile rubber-modified resin is from 2/10 to 10/10.

8. The method of making a rubber composition according to claim 2 wherein a weight ratio of alkylphenol • formaldehyde resin to nitrile rubber-modified resin is from 2/10 to 10/10.

9. The method of making a rubber composition according to claim 3 wherein a weight ratio of alkylphenol • formaldehyde resin to nitrile rubber-modified resin is from 2/10 to 10/10.

10. The method of making a rubber composition according to claim 1 wherein the fibers comprise poly(para-phenylene benzobisoxazole) fibers.

11. The method of making a rubber composition according to claim 2 wherein the fibers comprise poly(para-phenylene benzobisoxazole) fibers.

12. The method of making a rubber composition according to claim 3 wherein the fibers comprise poly(para-phenylene benzobisoxazole) fibers.

2 13. The method of making a rubber composition according to claim 4 wherein the fibers comprise poly(para-phenylene benzobisoxazole) fibers.

2 14. The method of making a rubber composition according to claim 7 wherein the fibers comprise poly(para-phenylene benzobisoxazole) fibers.

2 15. The method of making a rubber composition according to any of claims 1-14 further comprising the step of incorporating the rubber composition into a power transmission belt.

2 16. The method of making a rubber composition according to any of claims 1-14 wherein the fibers are preset in an amount of 1 to 40 parts by weight per 100 parts by weight of the rubber.

2 17. The method of making a rubber composition according to claim 15 wherein the fibers have a length of 1-20 mm.

2 18. The method of making a rubber composition according to claim 16 wherein the fibers have a length of 1-20 mm.

2 19. The method of making a rubber composition according to any of claims 1-14 further comprising the step of dispersing aramid fibers in the rubber.

2 20. The method of making a rubber composition according to claim 15 further comprising the step of dispersing aramid fibers in the rubber.

21. The method of making a rubber composition according to claim 16 further comprising the step of dispersing aramid fibers in the rubber.

22. The method of making a rubber composition according to claim 17 further comprising the step of dispersing aramid fibers in the rubber.

23. The method of making a rubber composition according to claim 15 wherein the power transmission belt comprises a body with a length, the body comprises a cushion rubber layer with load carrying cords embedded in the cushion rubber layer and extending lengthwise of the body, the body further comprising a compression rubber layer, and the compression rubber layer comprises the rubber composition.

24. The method of making a rubber composition according to claim 15 wherein the power transmission belt is a V-ribbed belt comprising a body with a length, and the body comprising a cushion rubber layer with load carrying cords embedded in the cushion rubber layer and extending lengthwise of the body and a compression layer.

25. The method of making a rubber composition according to claim 15 wherein the power transmission belt is a V-belt comprising a body with a length, the belt body comprising a cushion rubber layer with load carrying cords embedded in the cushion rubber layer and extending lengthwise of the body, the body further comprising a compression layer.

26. The method of making a rubber composition according to claim 24 wherein the compression layer comprises the rubber composition.

27. The method of making a rubber composition according to claim 25 wherein the compression layer comprises the rubber composition.

28. A power transmission belt comprising:
a body comprising rubber,
wherein fibers comprising poly(para-phenylene benzobisoxazole) are dispersed in the rubber.

29. The power transmission belt according to claim 28 wherein the fibers have a length of 1-20 mm.

30. The power transmission belt according to claim 29 wherein the fibers are present in an amount of 1-40 parts by weight per 100 parts by weight of the rubber.

31. The power transmission belt according to claim 28 wherein the body further comprises aramid fibers dispersed in the rubber.

32. The power transmission belt according to claim 28 wherein the fibers are treated with a treating liquid comprising nitrile rubber-modified epoxy resin and an alkylphenol •formaldehyde resin.

33. The power transmission belt according to claim 32 wherein the fibers are treated with an RFL liquid.

34. The power transmission belt according to claim 28 wherein the power transmission belt comprises a V-ribbed belt.

35. The power transmission belt according to claim 28 wherein the power transmission belt comprises a V-belt.

36. The power transmission belt according to claim 34 wherein the power transmission belt has a compression rubber layer and the fibers are dispersed in the rubber in the compression rubber layer.

37. The power transmission belt according to claim 35 wherein the power transmission belt has a compression rubber layer and the fibers are dispersed in the rubber in the compression rubber layer.

38. A composition comprising:
 rubber; and
 fibers comprising poly(para-phenylene benzobisoxazole) dispersed in the rubber,
 wherein the fibers are dispersed in the rubber in an amount of 1 to 40 parts by weight per 100 parts by weight of rubber.

2 39. The composition according to claim 38 wherein the fibers have a length of 1-20 mm.

2 40. The composition according to claim 39 wherein aramid fibers are dispersed in the rubber.

2 41. The composition according to claim 39 wherein the fibers are treated with a treating liquid comprising nitrile rubber-modified epoxy resin and an alkylphenol •formaldehyde resin.

2 42. The composition according to claim 39 wherein the fibers are treated with an RFL liquid.

2 43. The composition according to claim 41 wherein the fibers are treated with an RFL liquid.